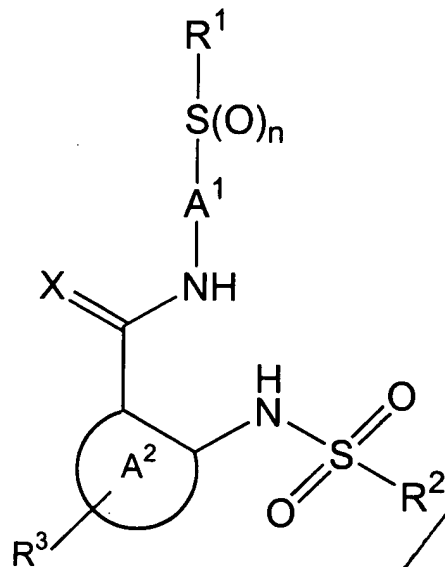


We claim:

1. A compound of formula I, a stereoisomeric form thereof, or a physiologically acceptable salt thereof:



wherein

A¹ is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)ₙ-(C₁-C₄)-alkyl, -S(O)ₙ-phenyl, and -S(O)ₙ-tolyl;

A², which comprises the two carbon atoms bonded to the groups C(=X)-NH- and NH-SO₂R², is a benzene ring,

contd.
B2

5

a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen

from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to

10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R¹, when n in the group R¹-S(O)_n- is 0, is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which

is unsubstituted or substituted by one or more identical or different residues

R⁴, or is -CN, or

when n in the group R¹-S(O)_n- is 1, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or

when n in the group R¹-S(O)_n- is 2, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or R¹ is

NR⁵R⁶;

R² is aryl, heterocyclyl, NR⁵R⁶, or (C₁-C₁₀)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴;

R³ is one or more identical or different residues chosen from hydrogen,

contd
B2

halogen, CF_3 , OH, $-\text{O}-(\text{C}_1-\text{C}_7)\text{-alkyl}$, $-\text{O}-(\text{C}_2-\text{C}_4)\text{-alkyl-O}-(\text{C}_1-\text{C}_7)\text{-alkyl}$, $-\text{O-aryl}$, $(\text{C}_1-\text{C}_2)\text{-alkylenedioxy}$, NO_2 , $-\text{CN}$, NR^7R^8 , $-\text{CO-NR}^7\text{R}^8$, $-\text{CO-OH}$, $-\text{CO-O}-(\text{C}_1-\text{C}_5)\text{-alkyl}$, heterocyclyl, $-\text{S(O)}_n\text{-(C}_1\text{-C}_5\text{)-alkyl}$, and $(\text{C}_1-\text{C}_5)\text{-alkyl}$

which is unsubstituted or substituted by one or more identical or different residues

5 R^4 ;

R^4 is fluorine, OH, $-\text{O}-(\text{C}_1-\text{C}_{10})\text{-alkyl}$, $-\text{O}-(\text{C}_2-\text{C}_4)\text{-alkyl-O}-(\text{C}_1-\text{C}_7)\text{-alkyl}$, $-\text{O-aryl}$, $-\text{CN}$,

NR^7R^8 , $-\text{CO-NH}_2$, $-\text{CO-NH}-(\text{C}_1-\text{C}_3)\text{-alkyl}$, $-\text{CO-N}((\text{C}_1-\text{C}_3)\text{-alkyl})_2$, $-\text{CO-OH}$, $-\text{CO-O}-(\text{C}_1-\text{C}_5)\text{-alkyl}$, heterocyclyl, or oxo;

R^5 is hydrogen, $(\text{C}_1-\text{C}_{10})\text{-alkyl}$ which is unsubstituted or substituted by one or more

10 identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, $-\text{CO-NR}^7\text{R}^8$, $-\text{CO-aryl}$, or $-\text{CO}-(\text{C}_1-\text{C}_{10})\text{-alkyl}$ wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues

R^4 ;

R^6 is hydrogen, $(\text{C}_1-\text{C}_{10})\text{-alkyl}$ which is unsubstituted or substituted

15 by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, $-\text{CO-NR}^7\text{R}^8$, $-\text{CO-aryl}$, or $-\text{CO}-(\text{C}_1-\text{C}_{10})\text{-alkyl}$ wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues

R^4 ;

or R^5 and R^6 together with the nitrogen atom to which they are bonded form a

20 5-membered to 8-membered saturated or partially unsaturated ring.

contd.
B²

wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and

wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, (C₁-C₅)-alkyl, hydroxy-(C₁-C₃)-alkyl-, -(C₁-C₃)-alkyl-O-(C₁-C₄)-alkyl, aryl, CF₃, OH, -O-(C₁-C₇)-alkyl, -O-aryl, -O-(C₂-C₄)-alkyl-O-(C₁-C₇)-alkyl, (C₂-C₃)-alkylenedioxy, NR⁷R⁸, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-NH₂, -S(O)_n-NH-(C₁-C₃)-alkyl, -S(O)_n-N((C₁-C₃)-alkyl)₂, oxo, -(CH₂)_m-NH₂, -(CH₂)_m-NH-(C₁-C₄)-alkyl, and -(CH₂)_m-N((C₁-C₄)-alkyl)₂ where in the substituent -(CH₂)_m-N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, which optionally further comprises an oxygen atom, sulfur atom, or a group NR⁵ as a ring member;

R⁷ is hydrogen or (C₁-C₇)-alkyl which is unsubstituted or substituted by one or more

identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, wherein said ring optionally further comprises an oxygen atom, sulfur atom, or a group NR⁵ as a ring member;

R⁸ is hydrogen, -CO-(C₁-C₄)-alkyl, or (C₁-C₇)-alkyl which is unsubstituted or substituted

contd
B²

by one or more identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR⁵ as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, -O-CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine,

contd.
B²

(C₁-C₅)-alkyl, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, NH₂,
-NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl,
-CO-N((C₁-C₃)-alkyl)₂, -CO-OH, and -CO-O-(C₁-C₅)-alkyl;

n is 0, 1, or 2;

5 m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring
carbon atom in the group A¹ which ring carbon atom is directly adjacent to the
carbon atom in A¹ bonded to the group -NH-C(=X)- so that the group -NH-C(=X)-
together with the carbon atoms in A¹ bonded to it forms an anellated imidazole ring;

10 excluding the compound of formula I wherein simultaneously

A² is a benzene ring which is substituted in positions 3 and 5 by chlorine,

R² is methyl, X is oxygen, and R¹-S(O)_n-A¹- is a

5-chloro-2-(4-chlorophenylmercapto)-phenyl residue

15 2. The compound of the formula I as claimed in claim 1, wherein A¹ is a phenylene
residue or a 5-membered or 6-membered heteroarylene residue, wherein said residues are
unsubstituted or substituted as set forth in claim 1.

20 3. The compound of the formula I as claimed in claim 1, wherein A² is an aromatic
ring.

4. The compound of the formula I as claimed in claim 1, wherein X is oxygen.

5. The compound of the formula I as claimed in claim 1, wherein R² is aryl and is unsubstituted or substituted as set forth in claim 1.

5

6. The compound of the formula I as claimed in claim 1, wherein R¹ is (C₁-C₇)-alkyl, aryl, or NR⁵R⁶, and is unsubstituted or substituted as set forth in claim 1.

7. The compound of the formula I as claimed in claim 1, wherein R¹ is NR⁵R⁶ and R⁵ and R⁶ independently of one another are hydrogen, (C₁-C₉)-alkyl, (C₁-C₄)-alkyl-O-(C₁-C₃)-alkyl-, or 5-membered or 6-membered aryl or R⁵ and R⁶ together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered heterocycle which optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, wherein said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from (C₁-C₃)-alkyl, hydroxy-(C₁-C₃)-alkyl-, 5-membered or 6-membered aryl, carbamoyl, hydroxy, and oxo.

8. The compound of the formula I as claimed in claim 1, wherein

A¹ is phenylene or heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₄)-alkyl, CF₃, -O-(C₁-C₄)-alkyl, and -CN;

5 A² is an aromatic ring;

R¹, when n in the group R¹-S(O)_n- is 1, is (C₁-C₇)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or R¹ is aryl, or when n in the group R¹-S(O)_n- is 2, R¹ is aryl, or (C₁-C₇)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or R¹ is NR⁵R⁶;

R² is aryl;

R³ is one or more identical or different residues chosen from hydrogen, halogen, CF₃, OH, -O-(C₁-C₄)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₄)-alkyl, -O-aryl, NO₂, -CN, NR⁷R⁸, -CO-NR⁷R⁸, -CO-OH, -CO-O-(C₁-C₄)-alkyl, heterocyclyl, -S(O)_n-(C₁-C₄)-alkyl, and (C₁-C₄)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴;

R⁴ is fluorine, OH, -O-(C₁-C₁₀)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₇)-alkyl, -O-aryl, -CN, NR⁷R⁸, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₄)-alkyl, heterocyclyl, or oxo;

20 R⁵ and R⁶ independently of one another are hydrogen, (C₁-C₉)-alkyl, (C₁-C₄)-alkyl-O-(C₁-C₃)-alkyl-, or aryl, or

R⁵ and R⁶ together with the nitrogen to which they are bonded form a 5-membered, 6-membered, or 7-membered heterocycle, wherein said heterocycle optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, and wherein said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from (C₁-C₃)-alkyl, hydroxy-(C₁-C₃)-alkyl-, aryl, carbamoyl, hydroxy, and oxo;

R⁷ is hydrogen, (C₁-C₃)-alkyl, ((C₁-C₄)-alkyl)₂N-(C₁-C₃)-alkyl-, or (C₁-C₄)-alkyl-O-(C₁-C₃)-alkyl-;

R⁸ is hydrogen, (C₁-C₃)-alkyl, or acetyl;

aryl is phenyl or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₄)-alkyl, phenyl, CF₃, NO₂, -O-(C₁-C₄)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-CO-(C₁-C₄)-alkyl, -CN, -CO-NH₂, -CO-OH, and -CO-O-(C₁-C₄)-alkyl;

heteroaryl and heteroarylene are a residue of a monocyclic 5-membered or

6-membered aromatic heterocycle which comprises one or more identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic 5-membered or 6-membered saturated

heterocycle which comprises one or more identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, (C₁-C₄)-alkyl, OH, -O-(C₁-C₄)-alkyl, NH₂, -CN, -CO-NH₂, -CO-OH, and -CO-O-(C₁-C₄)-alkyl;

n is 0, 1, or 2; and

X is oxygen.

9. The compound of the formula I as claimed in claim 1, wherein

5 A¹ is phenylene which is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₄)-alkyl, CF₃, -O-(C₁-C₄)-alkyl, and -CN;

A² is a benzene ring;

R¹ is NR⁵R⁶;

10 R² is aryl;

R³ is one or more identical or different residues chosen from hydrogen, halogen, CF₃, -O-(C₁-C₄)-alkyl, -CN, and (C₁-C₄)-alkyl;

R⁵ and R⁶ together with the nitrogen atom to which they are bonded form a

5-membered or 6-membered saturated heterocycle, wherein said heterocycle
15 optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, and said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from (C₁-C₃)-alkyl, hydroxy-(C₁-C₃)-alkyl-, aryl, carbamoyl, hydroxy, and oxo;

aryl is phenyl or 5-membered or 6-membered heteroaryl comprising one or more
20 identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and is unsubstituted or substituted by one or more identical or different substituents

chosen from halogen, (C₁-C₄)-alkyl, CF₃, NO₂, -O-(C₁-C₄)-alkyl,
-NH-CO-(C₁-C₄)-alkyl, and -CN;

n is 2; and

X is oxygen.

5

10. The compound of the formula I as claimed in claim 1, wherein

A¹ is an unsubstituted divalent phenylene residue;

A² is a benzene ring;

R¹ is NR⁵R⁶;

R² is aryl;

R³ is one or more identical or different residues chosen from hydrogen, halogen,
-O-(C₁-C₄)-alkyl, and (C₁-C₄)-alkyl;

R⁵ and R⁶ together with the nitrogen atom to which they are bonded form a saturated
6-membered heterocycle which optionally further comprises an additional ring
heteroatom chosen from nitrogen, oxygen, and sulfur, said heterocycle is
unsubstituted or substituted by one or more identical or different residues chosen
from (C₁-C₃)-alkyl, aryl, oxo and carbamoyl;

aryl is phenyl or 5-membered or 6-membered heteroaryl comprising one or more
identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and
is unsubstituted or substituted by one or more identical or different substituents
chosen from halogen, (C₁-C₄)-alkyl, CF₃, and -O-(C₁-C₄)-alkyl;

~~X is oxygen.~~

5 A' is an unsubstituted divalent 1,4-phenylene residue;

$$R^1 \text{ is } NR^5R^6;$$

10 R⁵ and R⁶ together with the nitrogen atom to which they are bonded form a saturated

n is 2; and

15 X is oxygen.

12. The compound of the formula I as claimed in claim 1, wherein said compound is chosen from:

2-(4-Chloro-phenylsulfonylamino)-4,5-dimethoxy-N-(4-(thiomorpholine-4-sulfonyl)-phenyl)-benzamide;

5 2-(4-Chloro-phenylsulfonylamino)-N-(4-(cis-2,6-dimethyl-morpholine-4-sulfonyl)-phenyl)-4,5-dimethoxy-benzamide;

5-Chloro-2-(5-chloro-thiophene-2-sulfonylamino)-N-(4-(morpholine-4-sulfonyl)-phenyl)-benzamide;

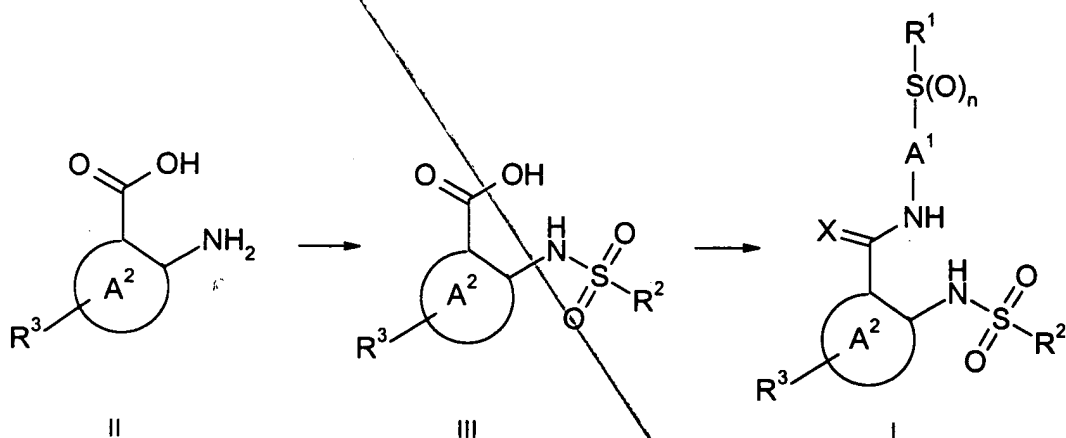
and pharmaceutically acceptable salts of any of the foregoing.

13. The compound of the formula I as claimed in claim 12, wherein said pharmaceutically acceptable salts are sodium salts.

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B³

14. A method for preparing a compound of formula I, comprising:
converting a cyclic aminocarboxylic acid compound of formula II into a
sulfonylaminocarboxylic acid compound of formula III; and
converting the sulfonylaminocarboxylic acid compound of formula III into a compound of
5 formula I:



wherein, in the compounds of formulae I, II, and III:

A¹ is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and
15 is unsubstituted or substituted by one or more identical or different substituents
chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl,
-O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl,
-N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-
alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-
20 (C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

A², which comprises the two carbon atoms bonded to the groups C(=X)-NH- and

contd.
B³

100-45660

NH-SO₂R², is a benzene ring,

a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to

5 7-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to

10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

10 R¹, when n in the group R¹-S(O)_n- is 0, is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or is -CN, or

when n in the group R¹-S(O)_n- is 1, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or

15 when n in the group R¹-S(O)_n- is 2, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or R¹ is NR⁵R⁶;

R² is aryl, heterocyclyl, NR⁵R⁶, or (C₁-C₁₀)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴;

20 R³ is one or more identical or different residues chosen from hydrogen,

contd.
B³

halogen, CF₃, OH, -O-(C₁-C₇)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₇)-alkyl, -O-aryl, (C₁-C₂)-alkylenedioxy, NO₂, -CN, NR⁷R⁸, -CO-NR⁷R⁸, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, -S(O)_n-(C₁-C₅)-alkyl, and (C₁-C₅)-alkyl

which is unsubstituted or substituted by one or more identical or different residues

5 R⁴;

R⁴ is fluorine, OH, -O-(C₁-C₁₀)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₇)-alkyl, -O-aryl, -CN, NR⁷R⁸, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, or oxo;

10 R⁵ is hydrogen, (C₁-C₁₀)-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R⁴ and aryl, or is aryl, heterocyclyl, -CO-NR⁷R⁸, -CO-aryl, or -CO-(C₁-C₁₀)-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R⁴;

15 R⁶ is hydrogen, (C₁-C₁₀)-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R⁴ and aryl, or is aryl, heterocyclyl, -CO-NR⁷R⁸, -CO-aryl, or -CO-(C₁-C₁₀)-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R⁴;

20 or R⁵ and R⁶ together with the nitrogen atom to which they are bonded form a 5-membered to 8-membered saturated or partially unsaturated ring.

contd
B3

wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, (C₁-C₅)-alkyl, hydroxy-(C₁-C₃)-alkyl-, -(C₁-C₃)-alkyl-O-(C₁-C₄)-alkyl, aryl, CF₃, OH, -O-(C₁-C₇)-alkyl, -O-aryl, -O-(C₂-C₄)-alkyl-O-(C₁-C₇)-alkyl, (C₂-C₃)-alkylenedioxy, NR⁷R⁸, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-NH₂, -S(O)_n-NH-(C₁-C₃)-alkyl, -S(O)_n-N((C₁-C₃)-alkyl)₂, oxo, -(CH₂)_m-NH₂, -(CH₂)_m-NH-(C₁-C₄)-alkyl, and -(CH₂)_m-N((C₁-C₄)-alkyl)₂ where in the substituent -(CH₂)_m-N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, which optionally further comprises an oxygen atom, sulfur atom, or a group NR⁵ as a ring member;

R⁷ is hydrogen or (C₁-C₇)-alkyl which is unsubstituted or substituted by one or more

identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, wherein said ring optionally further comprises an oxygen atom, sulfur atom, or a group NR⁵ as a ring member;

R⁸ is hydrogen, -CO-(C₁-C₄)-alkyl, or (C₁-C₇)-alkyl which is unsubstituted or substituted

contd.
B³

by one or more identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR⁵ as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, -O-CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine,

contd.
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(C₁-C₅)-alkyl, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, NH₂,
-NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl,
-CO-N((C₁-C₃)-alkyl)₂, -CO-OH, and -CO-O-(C₁-C₅)-alkyl;

n is 0, 1, or 2;

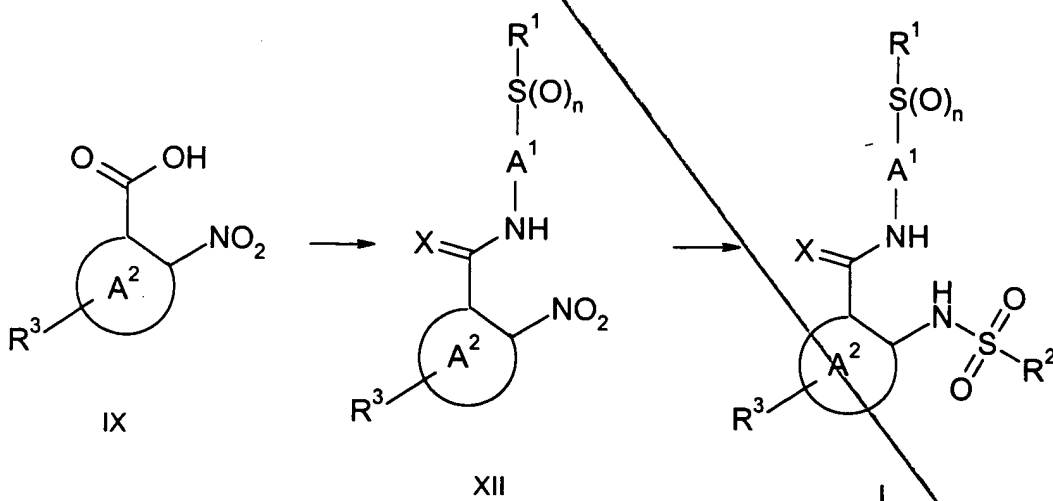
5 m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring
carbon atom in the group A¹ which ring carbon atom is directly adjacent to the
carbon atom in A¹ bonded to the group -NH-C(=X)- so that the group -NH-C(=X)-
together with the carbon atoms in A¹ bonded to it forms an anellated imidazole ring;

10 or when one or more of said residues, independent of each other, are present in protected
form or in a form of precursor groups.

contd.
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15. A method for preparing a compound of formula I, comprising:
converting a cyclic nitrocarboxylic acid compound of formula IX into a nitrocarboxamide
compound of formula XII; and
converting the nitrocarboxamide compound of the formula XII into a compound of formula I
5 by
reducing the nitro group to an amino group, and
sulfonylating the amino group:



wherein, in the compounds of formulae IX, XII, and I:

A¹ is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and

is unsubstituted or substituted by one or more identical or different substituents

chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl,

-O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl,

-N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-

contd.
B³

alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

A², which comprises the two carbon atoms bonded to the groups C(=X)-NH- and NH-SO₂R², is a benzene ring,

5 a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, or

10 a saturated or partially unsaturated or aromatic bicyclic 8-membered to 10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R¹, when n in the group R¹-S(O)_n- is 0, is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues

15 R⁴, or is -CN, or

when n in the group R¹-S(O)_n- is 1, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or

when n in the group R¹-S(O)_n- is 2, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or R¹ is

20 NR⁵R⁶;

R² is aryl, heterocyclyl, NR⁵R⁶, or (C₁-C₁₀)-alkyl which is unsubstituted or substituted by

contd.
B3

one or more identical or different residues R^4 ;

R^3 is one or more identical or different residues chosen from hydrogen,

halogen, CF_3 , OH, $-O-(C_1-C_7)\text{-alkyl}$, $-O-(C_2-C_4)\text{-alkyl-O-(C}_1\text{-C}_7\text{)-alkyl}$, $-O\text{-aryl}$, $(C_1-C_2)\text{-alkylenedioxy}$, NO_2 , $-CN$, NR^7R^8 , $-CO\text{-}NR^7R^8$, $-CO\text{-OH}$, $-CO\text{-O-(C}_1\text{-C}_5\text{)-alkyl}$,

heterocyclyl, $-S(O)_n\text{-(C}_1\text{-C}_5\text{)-alkyl}$, and $(C_1-C_5)\text{-alkyl}$

which is unsubstituted or substituted by one or more identical or different residues

R^4 ;

R^4 is fluorine, OH, $-O-(C_1-C_{10})\text{-alkyl}$, $-O-(C_2-C_4)\text{-alkyl-O-(C}_1\text{-C}_7\text{)-alkyl}$, $-O\text{-aryl}$, $-CN$,

NR^7R^8 , $-CO\text{-NH}_2$, $-CO\text{-NH-(C}_1\text{-C}_3\text{)-alkyl}$, $-CO\text{-N((C}_1\text{-C}_3\text{)-alkyl)}_2$, $-CO\text{-OH}$, $-CO\text{-O-(C}_1\text{-C}_5\text{)-alkyl}$, heterocyclyl, or oxo;

R^5 is hydrogen, $(C_1-C_{10})\text{-alkyl}$ which is unsubstituted or substituted by one or more

identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, $-CO\text{-}NR^7R^8$, $-CO\text{-aryl}$, or $-CO\text{-(C}_1\text{-C}_{10}\text{)-alkyl}$ wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues

R^4 ;

R^6 is hydrogen, $(C_1-C_{10})\text{-alkyl}$ which is unsubstituted or substituted

by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, $-CO\text{-}NR^7R^8$, $-CO\text{-aryl}$, or $-CO\text{-(C}_1\text{-C}_{10}\text{)-alkyl}$ wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues

R^4 ;

or R^5 and R^6 together with the nitrogen atom to which they are bonded form a

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⁸R is hydrogen, -CO-(C₁-C₄)-alkyl, or (C₁-C₇)-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR⁵ as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, -O-CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur; heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted

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or substituted by one or more identical or different substituents chosen from fluorine,
(C₁-C₅)-alkyl, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, NH₂,
-NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl,
-CO-N((C₁-C₃)-alkyl)₂, -CO-OH, and -CO-O-(C₁-C₅)-alkyl;

5 n is 0, 1, or 2;

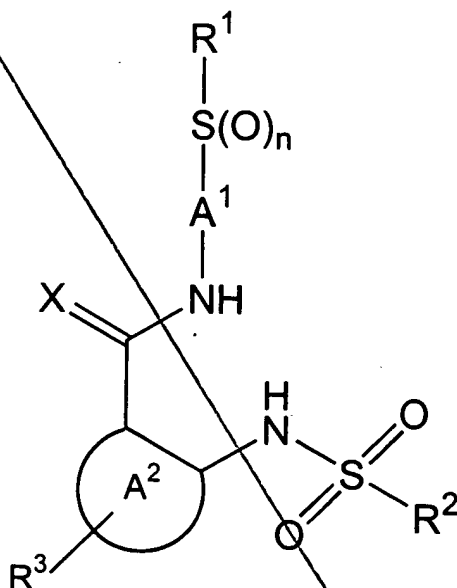
m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring
carbon atom in the group A¹ which ring carbon atom is directly adjacent to the
carbon atom in A¹ bonded to the group -NH-C(=X)- so that the group -NH-C(=X)-
together with the carbon atoms in A¹ bonded to it forms an anellated imidazole ring;
or when one or more of said residues, independent of each other, are present in protected
form or in a form of precursor groups.

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contd.
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16. A composition, comprising a compound of formula I:



wherein

A¹ is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

A², which comprises the two carbon atoms bonded to the groups C(=X)-NH- and NH-SO₂R², is a benzene ring,

contd.
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a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen

5 from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to

10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R¹, when n in the group R¹-S(O)_n- is 0, is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which

10 is unsubstituted or substituted by one or more identical or different residues

R⁴, or is -CN, or

when n in the group R¹-S(O)_n- is 1, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴, or

when n in the group R¹-S(O)_n- is 2, R¹ is aryl, heterocyclyl, or (C₁-C₁₈)-alkyl which is
15 unsubstituted or substituted by one or more identical or different residues R⁴, or R¹ is NR⁵R⁶;

R² is aryl, heterocyclyl, NR⁵R⁶, or (C₁-C₁₀)-alkyl which is unsubstituted or substituted by one or more identical or different residues R⁴;

R³ is one or more identical or different residues chosen from hydrogen,

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halogen, CF_3 , OH, $-\text{O}-(\text{C}_1-\text{C}_7)\text{-alkyl}$, $-\text{O}-(\text{C}_2-\text{C}_4)\text{-alkyl-O}-(\text{C}_1-\text{C}_7)\text{-alkyl}$, $-\text{O-aryl}$, $(\text{C}_1-\text{C}_2)\text{-alkylenedioxy}$, NO_2 , $-\text{CN}$, NR^7R^8 , $-\text{CO-NR}^7\text{R}^8$, $-\text{CO-OH}$, $-\text{CO-O}-(\text{C}_1-\text{C}_5)\text{-alkyl}$, heterocyclyl, $-\text{S(O)}_n\text{-(C}_1\text{-C}_5\text{)-alkyl}$, and $(\text{C}_1-\text{C}_5)\text{-alkyl}$

which is unsubstituted or substituted by one or more identical or different residues

5 R^4 ;

R^4 is fluorine, OH, $-\text{O}-(\text{C}_1-\text{C}_{10})\text{-alkyl}$, $-\text{O}-(\text{C}_2-\text{C}_4)\text{-alkyl-O}-(\text{C}_1-\text{C}_7)\text{-alkyl}$, $-\text{O-aryl}$, $-\text{CN}$, NR^7R^8 , $-\text{CO-NH}_2$, $-\text{CO-NH}-(\text{C}_1-\text{C}_3)\text{-alkyl}$, $-\text{CO-N}((\text{C}_1-\text{C}_3)\text{-alkyl})_2$, $-\text{CO-OH}$, $-\text{CO-O}-(\text{C}_1-\text{C}_5)\text{-alkyl}$, heterocyclyl, or oxo;

10 R^5 is hydrogen, $(\text{C}_1-\text{C}_{10})\text{-alkyl}$ which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl, or is aryl, heterocyclyl, $-\text{CO-NR}^7\text{R}^8$, $-\text{CO-aryl}$, or $-\text{CO}-(\text{C}_1-\text{C}_{10})\text{-alkyl}$ wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4 ;

15 R^6 is hydrogen, $(\text{C}_1-\text{C}_{10})\text{-alkyl}$ which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl, or is aryl, heterocyclyl, $-\text{CO-NR}^7\text{R}^8$, $-\text{CO-aryl}$, or $-\text{CO}-(\text{C}_1-\text{C}_{10})\text{-alkyl}$ wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4 ;

20 or R^5 and R^6 together with the nitrogen atom to which they are bonded form a 5-membered to 8-membered saturated or partially unsaturated ring.

contd
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wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and
wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, (C₁-C₅)-alkyl, hydroxy-(C₁-C₃)-alkyl-, -(C₁-C₃)-alkyl-
5 O-(C₁-C₄)-alkyl, aryl, CF₃, OH, -O-(C₁-C₇)-alkyl, -O-aryl, -O-(C₂-C₄)-alkyl-O-(C₁-C₇)-
alkyl, (C₂-C₃)-alkylenedioxy, NR⁷R⁸, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl,
-CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-
(C₁-C₄)-alkyl, -S(O)_n-NH₂, -S(O)_n-NH-(C₁-C₃)-alkyl, -S(O)_n-N((C₁-C₃)-alkyl)₂, oxo,
-(CH₂)_m-NH₂, -(CH₂)_m-NH-(C₁-C₄)-alkyl, and -(CH₂)_m-N((C₁-C₄)-alkyl)₂ where in the
10 substituent -(CH₂)_m-N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical
or different, or are connected by a single bond and together with the nitrogen atom
to which they are bonded form a 5-membered to 7-membered ring, which optionally
further comprises an oxygen atom, sulfur atom, or a group NR⁵ as a ring member;

R⁷ is hydrogen or (C₁-C₇)-alkyl which is unsubstituted or substituted by one or more

15 identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-
C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two
alkyl groups are independent, identical or different, or are connected by a single
bond and together with the nitrogen atom to which they are bonded form a
5-membered to 7-membered ring, wherein said ring optionally further comprises an
20 oxygen atom, sulfur atom, or a group NR⁵ as a ring member;

R⁸ is hydrogen, -CO-(C₁-C₄)-alkyl, or (C₁-C₇)-alkyl which is unsubstituted or substituted

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by one or more identical or different substituents chosen from OH, -O-(C₁-C₅)-alkyl, NH₂, -NH-(C₁-C₄)-alkyl, and -N((C₁-C₄)-alkyl)₂ where in the substituent N((C₁-C₄)-alkyl)₂ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR⁵ as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C₁-C₅)-alkyl, phenyl, tolyl, CF₃, -O-CF₃, NO₂, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, (C₁-C₂)-alkylenedioxy, NH₂, -NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -NH-CHO, -NH-CO-(C₁-C₅)-alkyl, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl, -CO-N((C₁-C₃)-alkyl)₂, -CO-OH, -CO-O-(C₁-C₅)-alkyl, heterocyclyl, CHO, -CO-(C₁-C₅)-alkyl, -S(O)_n-(C₁-C₄)-alkyl, -S(O)_n-phenyl, and -S(O)_n-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine,

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(C₁-C₅)-alkyl, OH, -O-(C₁-C₅)-alkyl, -O-(C₂-C₄)-alkyl-O-(C₁-C₃)-alkyl, NH₂,
-NH-(C₁-C₃)-alkyl, -N((C₁-C₃)-alkyl)₂, -CN, -CO-NH₂, -CO-NH-(C₁-C₃)-alkyl,
-CO-N((C₁-C₃)-alkyl)₂, -CO-OH, and -CO-O-(C₁-C₅)-alkyl;

n is 0, 1, or 2;

5 m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring
carbon atom in the group A¹ which ring carbon atom is directly adjacent to the
carbon atom in A¹ bonded to the group -NH-C(=X)- so that the group -NH-C(=X)-
together with the carbon atoms in A¹ bonded to it forms an anellated imidazole ring;
10 or a stereoisomer thereof, or a physiologically acceptable salt thereof, or a mixture of
two or more of any of the foregoing; and
a pharmaceutically acceptable carrier.

17. A composition useful for the treatment or prevention of cardiovascular diseases,
15 endothelial dysfunction, diastolic dysfunction, atherosclerosis, hypertension, angina
pectoris, thromboses, restenoses, myocardial infarction, strokes, cardiac insufficiency,
pulmonary hypertonia, erectile dysfunction, asthma bronchiale, chronic kidney
insufficiency, diabetes or cirrhosis of the liver, said composition comprising an amount
efficacious for said treatment or prevention of a compound of formula I as claimed in claim
20 1, a stereoisomeric form thereof, or a physiologically acceptable salt thereof, or a mixture
of two or more of any of the foregoing, and

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B³
~~a pharmaceutically acceptable carrier.~~

18. A method for activating soluble guanylate cyclase, said method comprising the step of administering an amount efficacious therefor of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, a physiologically acceptable salt thereof, or a mixture of any two or more of the foregoing.

19. The method as claimed in claim 18, further comprising the step of diagnosing a disease.

20. The method as claimed in claim 18, wherein said administering is to a human or animal patient in need of such activating.

21. A method for treatment or prevention of cardiovascular diseases, endothelial dysfunction, diastolic dysfunction, atherosclerosis, hypertension, angina pectoris, thromboses, restenoses, myocardial infarction, strokes, cardiac insufficiency, pulmonary hypertonia, erectile dysfunction, asthma bronchiale, chronic kidney insufficiency, diabetes, or cirrhosis of the liver in a human or animal patient, said method comprising the step of administering to the patient an amount efficacious for said treatment or prevention of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, a physiologically acceptable salt thereof, or a mixture of any two or more of the foregoing.

22. A method for improving restricted memory performance or ability to learn in a human or animal patient, said method comprising the step of administering an amount efficacious therefor to the patient of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, a physiologically acceptable salt thereof, or a mixture of any
- 5 two or more of the foregoing.

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